Natural System Model (NSM)

!!!!!!!! NOTE !!!!!!!!
PRELIMINARY Results of NSMv4.5
are displayed in the performance measures

NSM 4.5 is a regional-scale numerical simulation model which estimates the pre-drainage hydrologic response of the Everglades system to 1965-95 climate conditions. The NSM is based on the same physically-based algorithms for overland flow, evapotranspiration, etc, as the South Florida Water Management Model; but it contains none of the managed system features (levees, canals, structures, developed lands, etc). Estimates of pre-drainage vegetation and topography are also used by the NSM.

For the C&SF Restudy, the NSM output is being used as a guide for designing hydrologic restoration components. Specific uses of the NSM will be determined through the study process. The results are currently being displayed as a means of comparing the general hydrologic patterns of the estimated pre-drainage landscape, with those of the managed system and alternative plans.

The version of the NSM that is displayed in the performance measures is **preliminary Version 4.5**. This preliminary version contains the recommendations from the USGS review, and some additional modifications. These additional modifications to the NSM include more-recent estimates of pre-drainage vegetation patterns and topography, and the calibrated evapotranspiration and overland flow roughness coefficients from the latest version of the SFWMM (v3.4). Since this new version of the NSM has not been reviewed in-depth due to limited time, the results displayed are provisional and may change slightly as the more in-depth review is completed. NSM 4.5 is scheduled for completion by October 31, 1997, and draft documentation will be available by November 28, 1997.

For more information, there are two published sources on previous versions of the NSM:

1. Fennema, R.J., Neidrauer, C.J., Johnson, R.A., MacVicar, T.K., and Perkins, W.A. "A Computer Model to Simulate Natural Everglades Hydrology@, in *Everglades: The Ecosystem and It's Restoration*, Davis, S.M. and Ogden J.C. (Eds.) St. Lucie Press, Delray Beach, Fla., Chapter 10.
2. Bales, J.D., Fulford, J.M. and Swain, E., AA Review of Selected Features of the Natural System Model, and Suggestions for Applications in South Florida@. U.S. Geol. Surv. Water-Resources Report 97-4039.